

Seven new orchids from Western Australia

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Abstract

George, A. S. Seven new orchids from Western Australia. Nuytsia 5(1): 53-62 (1984). The following new taxa are described: *Caladenia amplexans*, *C. infundibularis*, *C. uliginosa*, *C. wanosa*, *Drakaea thymniphila*, *Pterostylis dilatata* and *Thelymitra variegata* var. *apiculata*.

Introduction

Description of these orchids arises from new collections and research carried out following my Check list of the Orchidaceae of Western Australia in Nuytsia 1: 166-196 (1970). Most have been known for some years but it has only recently been possible to decide the rank at which they should be named. The *Drakaea* provides a name for a species to which, until 1970, the name *D. elastica* Lindley was misapplied.

Caladenia amplexans A. S. George, sp. nov. (Figure 1A-D)

Species *Caladeniae caeruleae* R. Br. affinis, a qua lobis lateralibus labelli purpureis columnam amplectentibus praecipue differt, etiam folio latiore undique viridi, flore caeruleo pallidiore, et labello sine vittis transversalibus prominentibus.

Typus: 53 miles (c. 85 km) NE of Wubin, Western Australia (c. 29°53'S, 117°00'E) 20 Aug. 1960, A. S. George 900 (holo: PERTH).

Tuber ovoid, 1.5-2.5 cm long, the outer layers densely matted. *Flowering plant* to 25 cm tall. *Leaf* broadly linear, obtuse to acute, 2.5-12.5 cm long, 2-7 mm wide, sparsely hirsute above, almost glabrous below, green both sides. *Stem* hirsute with non-glandular hairs; bract 1, at middle; floral bract obtuse, 5-9 mm long. *Flower* 1, sometimes 2, pale blue inside and outside, scentless. *Lateral sepals* broadly falcate, directed forwards, obtuse, 7-16 mm long, 2-6 mm wide, closely glandular outside. *Dorsal sepal* linear, erect, 8-18 mm long, 2-4 mm wide, glandular outside. *Petals* linear, slightly falcate, 9-16 mm long, 2-4 mm wide, sparsely glandular outside. *Labellum* erect, 5-7 mm high, the apex recurved; lateral lobes broadly obtuse, entire, 1.5-2 mm high, clasping column apex, purple-maroon, sometimes faintly and irregularly banded; apical lobe c. 1 mm long, yellow, the margins with small calli; calli of lamina in 2 rows of 10-14 to the bend, then irregularly crowded on the apical lobe, cream, the basal ones almost 1 mm long, becoming smaller distally, the heads globular, papillose; sometimes small calli lateral to 2 main rows. *Column* 5-7 mm high, broadly winged from base to anther; anther apiculate.

Selected collections examined. Between Wurarga and Pindar, Aug. 1963, Y. Chadwick 2037; NW of Eurardy Stn homestead, 27°19'S, 114°27'E, 25 Aug. 1969, A. S. George 9541; Morawa, 27 Aug. 1959, M. C. George; near Koorda, 17 Sept. 1972, B. & M. Smith; 11 km N of Bullfinch, P. G. Wilson 6173; 24 km W of Paynes Find, 7 Aug. 1969, P. G. Wilson 8647. All collections at PERTH.

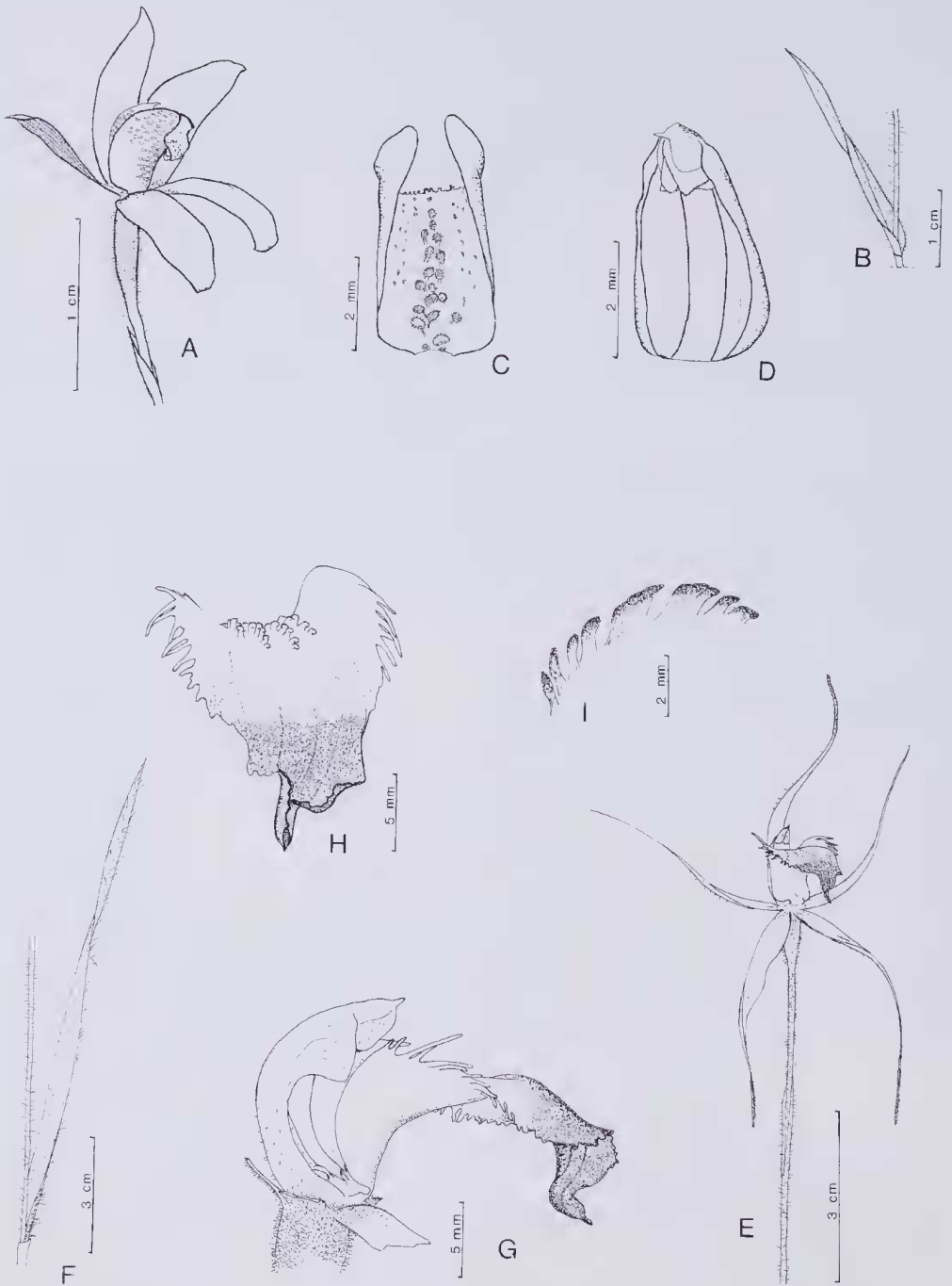


Figure 1. A-D—*Caladenia amplexans*. A—Flower. B—Leaf. C—Labellum from rear. D—Column from front. Locality not recorded. E-I—*Caladenia infundibularis*. E—Flower. F—Leaf. G—Labellum and column from side. H—Labellum from front and above. I—One row of calli. From A. S. George 11727.

Distribution. Western Australia, from the lower Murchison River to Merredin and east to Mt Churchman and Bullabulling.

Habitat. In loam and clay in *Acacia* shrubland, in granitic soil, and on greenstone ridges.

Flowering period. August—September.

Affinities. *Caladenia amplexans* has a strong affinity with *C. caerulea* R. Br. of the section *Caladenia*. It is readily distinguished from this species by the labellum which clasps the column with its lateral lobes. In *C. caerulea* these lobes are erect and well-spaced from the column. *Caladenia amplexans* usually has a broader leaf that is green (not red) beneath, the perianth segments are more obtuse, and the flowers are paler blue. The labellum lacks the prominent transverse red bands of *C. caerulea*. The distributions of the two species overlap slightly near the line of the Great Eastern Highway, but *C. caerulea* in Western Australia otherwise occurs south of *C. amplexans*. The two species have not been recorded growing together.

The column-clasping labellum is also found in the related *Caladenia saccharata* H. G. Reichb., but this species has a glistening white, sweetly scented flower and a narrow red-green leaf. There is also an affinity with the much larger species *C. sericea* Lindley.

Conservation status. Not considered rare or endangered.

Etymology. The Latin epithet *amplexans* (clasping) refers to the labellum.

Caladenia infundibularis A. S. George, sp. nov. (Figure 1E-I)

Species *Caladeniae huegelii* H. G. Reichb. affinis, a qua floribus pallide viridibus et atro-rubris; lamina labelli pro parte maxima horizontali apice deorsum curvato marginibus incurvis; et callis 4(-6) seriatis non ad dimidium laminae attingentibus, differt.

Typus: Near Scenic Drive turnoff, Augusta-Cape Leeuwin road, Western Australia (34°20'S, 115°09'E), 16 October 1973, A. S. George 11727 (holo: PERTH; iso: CANB).

A moderately robust spider orchid to 70 cm tall. *Leaf* linear to narrow-lanceolate, erect, 13-26 cm long, 8-14 mm wide, acute, hirsute both sides. *Stem* hirsute; stem bract 1. *Ovary* densely glandular-hirsute. *Flowers* 1 or 2; perianth pale green with maroon markings; sepals and petals finely nerved; scent absent. *Lateral sepals* spreading, broadly linear for 10-15 mm, then narrowed to filiform points, the whole 30-55 mm long, with slender clubs 7-15 mm long; dorsal sepal erect, linear, tapering to filiform point, 30-58 mm long, with club 6-15 mm long; sepals glabrous inside except some short glandular hairs near base, sparsely glandular-pubescent outside but glabrous below clubs; clubs very shortly glandular. *Petals* spreading, linear, tapering to filiform points, without clubs, 30-40 mm long. *Labellum* on a claw of 1-2 mm, the lamina obovate-obtrullate, horizontal for most of its length, towards the apex downturned with incurved margins almost forming a funnel, the apex itself turned under or outwards; margins entire at base for 7-10 mm, then fringed with fine smooth segments 3-7 mm long becoming shorter and thicker anteriorly, near the apex irregularly dentate to entire; apex almost acute; whole lamina 17-24 mm long, 9-15 mm wide excluding fringe, the lower 1/2 to 2/3 pale green, remainder dark red;

calli in 4 (sometimes 6) rows extending for 7-10 mm from base, slender, linear but with curved apices, the basal ones straight, c. 1.5 mm long, anterior ones less than 1 mm. *Column* ± erect, 13-15 mm high, narrowly winged with triangular, obtuse lobes c. 3 mm wide just below anther; anther 3-4 mm long, apiculate; 2 yellow glands at base of column.

Collections examined. Karridale, Oct. 1905, *C. Andrews*; "Cape Augusta" (probably Cape Leeuwin), 18 Oct. 1962, *A. R. Fairall* 789; Margaret River, Oct. 1959, *K. Fletcher*; S of Yallingup, 8 Oct. 1967, *A. S. George* 9209; Margaret River district, Oct. 1914, *L. Glauert*; Karridale, 12 Oct. 1977, *R. Heberle*; 5.5 km E of Karridale, 23 Oct. 1974, *S. D. Hopper*; Augusta, 17 Oct. 1967, *G. Sumner*; Yallingup, Oct. 1958, *T. Smith*. All collections at PERTH.

Distribution. Western Australia, between Cape Leeuwin and Cape Naturaliste.

Habitat. In loam in Jarrah-Karri forest, and in granitic sandy loam in low shrubland near coast.

Flowering period. October.

Affinities. This species belongs to the complex within section *Calonema* that includes *C. huegelii* H. G. Reichb. and *C. dilatata* R. Br. It is distinguished by the broad, horizontal lamina of the labellum, by the apex which is funnel-shaped with incurved margins, and by the 4-6 short rows of slender calli.

Conservation status. Rare, coded 2RC (Leigh, Briggs & Hartley 1981).

Etymology. The Latin *infundibularis* (funnel-shaped) refers to the apex of the labellum.

***Caladenia uliginosa* A. S. George, sp. nov. (Figure 2)**

Species *Caladeniae patersonii* R. Br. affinis, a qua praecipue floribus minoribus, labello minore pallide viridi et purpureo breviter fimbriato, differt. Sepala 4.5-8 cm longa; labellum 15-19 mm longum, 6-9 mm latum.

Typus: 31 km N of Frankland, Western Australia (34°11'S, 116°59'E), 3 Oct. 1978, *A. S. George* 15250 (holo: PERTH; iso: AD, CANB, K, MEL, NSW, PERTH).

A slender spider orchid to 35 cm tall. *Leaf* linear, often broadly, acute or obtuse, 5-20 cm long, hirsute both sides, the hairs more sparse towards apex. *Stem* hirsute; stem bract 2-3 cm long. *Ovary* glandular-hirsute. *Flowers* 1-4; perianth pale green or greenish-cream with maroon markings; scent absent. *Sepals* broadly linear for 12-20 mm, then narrowed rather abruptly to filiform points, the whole 45-80 mm long, sparsely glandular near base, densely so on apices; lateral sepals pendulous. *Petals* similar but 35-55 mm long. *Labellum* erect on a claw 1 mm long, 7-9 mm high, 8-10 mm long, 15-19 mm long flattened, 6-9 mm wide; lamina narrowly ovate-oblong when flattened, curved forwards with the apex recurved; lateral lobes small, with a fringe of smooth segments up to 2.5 mm long; apex dentate, maroon; *calli* in 4 rows, often 6 near base, reducing to 2 near apex, narrow, slipper-like, white at base of labellum, smaller and maroon towards apex, not reaching apex. *Column* tilted slightly back, then forwards, 11-14 mm high; wings expanded to 4 mm wide below anther; 2 yellow glands inside at base; *anther* apiculate.

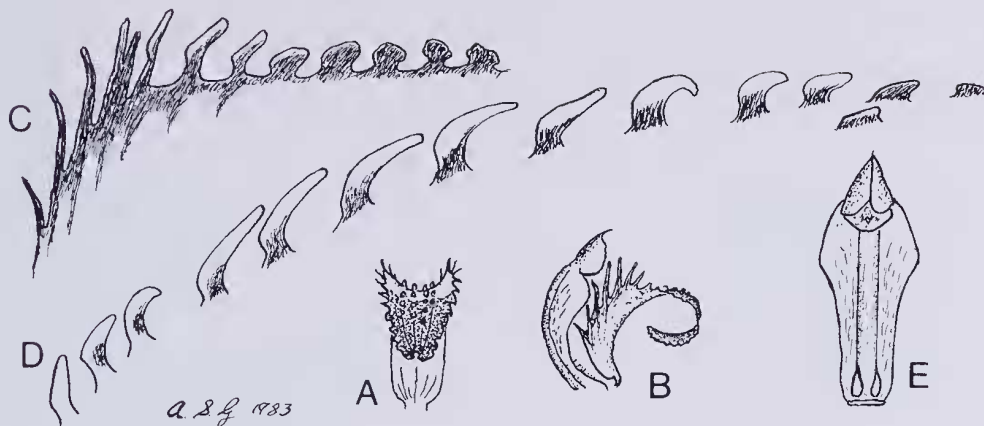


Figure 2. *Caladenia uliginosa*. A—Labellum from front x2. B—Labellum and column from side x2. C—Fringe of labellum margin. D—One row of calli from labellum. E—Column from front x3. Locality not recorded.

Selected collections examined. Near Dryandra, 29 Sept. 1971, A. S. George 11053 (PERTH); 12.5 km W of Frankland R., Muir Hwy, 2 Nov. 1977, A. S. George 15023 (AD, CANB, K, NSW, PERTH); Woodanilling turnoff, Albany Hwy, 3 Oct. 1978, A. S. George 15263 (PERTH); Kojonup, Oct. 1924, B. T. Goadby (PERTH); Rocky Gully, 9 Nov. 1977, R. Heberle (PERTH); Bridgetown, 15 Oct. 1919, O. H. Sargent (PERTH).

Distribution. Western Australia, between Dryandra, Pindalup, Bridgetown, Rocky Gully and Kojonup.

Habitat. Low-lying clay flats, wet in winter, in Eucalypt low open woodland and open shrubland.

Flowering period. October–November.

Affinities. *Caladenia uliginosa* belongs to the section *Calonema* in which it is related to *C. patersonii* R. Br. It is distinguished from this species by the pale green and red flowers, the smaller labellum with shortly fringed lateral lobes and maroon apex, and the lack of scent. Usually it is a short plant less than 20 cm tall.

Conservation status. Not considered rare or endangered.

Etymology. The Latin *uliginosus*, swampy, refers to the preferred habitat of the species.

***Caladenia wanosa* A. S. George, sp. nov. (Figure 3A-E)**

Species *Caladeniae radiali* R. Rogers affinis, a qua foliis minus hirsutis, sepalibus non nisi per 3–6 mm ab apicibus glandulosis, petalis glabris, sepalo dorsali erecto, et callis labelli vinosis in seriebus duabus, differt.

Typus: W of Eurardy Station homestead, N of Murchison River, Western Australia (27°34'S, 114°40'E), 24 Aug. 1969, A. S. George 9530 (holo: PERTH; iso: CANB).

A small slender spider orchid 10-20 cm tall. *Leaf* linear, erect or ascending, 3-9 cm long, 2-3 mm wide, acute, hirsute on lower surface, glabrous or very sparsely hirsute on upper surface, the hairs mostly non-glandular. *Stem* loosely hirsute with both short and long glandular and non-glandular hairs; stem bract 1; a similar bract subtending flower. *Flower* 1, rarely 2; perianth cream with deep maroon markings, almost glabrous except the glandular apices to the sepals; all segments 3-5-nerved, the central nerve the most prominent. *Sepals* broadly linear in lower half, tapering to filiform apices, the distal 3-6 mm glandular with short, thick glands, the whole sepal 21-32 mm long; lateral sepals curved down, dorsal sepal erect. *Petals* almost horizontal, linear, tapering to acuminate apices, 12-24 mm long. *Labellum* on a claw of 1-1.5 mm, erect at base, then curved forward with the apex recurved; lamina transversely elliptic, 8-10 mm wide, when flattened \pm obovate and 12-13 mm long, prominently nerved, the nerves fanned outwards from base; lateral lobes \pm horizontal; apex obtuse, maroon; margins entire, smooth, slightly thickened towards recurved apex; *calli* in 2 rows extending about half-way along lamina from base, 7-12 calli per row, the basal 1-3 \pm slender with narrow-ovoid heads, the others stout with heads becoming spherical on the short anterior calli, the heads divergent from the mid-line of the lamina; calli deep maroon. *Column* erect, 8-10 mm high, with scattered glands inside; no yellow glands at base; wings narrow above broad base and expanded below anther into lobes 2 mm broad with lower angle pronounced but obtuse; *anther* ascending to horizontal, 1.5-2 mm long, very shortly apiculate.

Other collections examined. Z Bend, Murchison River, Kalbarri National Park, early Sept. 1972, N. Hoffman (PERTH, K, MEL, NSW).

Distribution. Western Australia, in the lower Murchison River area.

Habitat. On a sandy flat in the shelter of shrubs (George) and in sand over sandstone among shrubs at the edge of the Murchison River gorge (Hoffman).

Flowering period. August-September.

Affinities. *Caladenia wanosa* is closely related to *C. radialis* R. Rogers, differing from it especially in the leaf, perianth and calli. The leaf is less hirsute than in *C. radialis*; only the sepals are glandular and then for only 3-6 mm (in *radialis* all segments are glandular for up to half their length); the dorsal sepal is erect (curved backwards and horizontal or pendulous in *radialis*); the calli are in 2 distinct rows, thick and maroon (in a \pm crowded band, slender and white to cream in *radialis*). *Caladenia wanosa* occurs well north of the known range of *C. radialis*, which occurs between Mingenew, Highbury and Ravensthorpe. These two species are probably best placed in section *Phlebochilus* Benth. A review of the infrageneric classification of *Caladenia* is needed, since many species have been described since Bentham divided the genus into five sections (Fl. Austral. 6: 376-389, 1873).

Conservation status. Rare, coded 2RC (Leigh, Briggs & Hartley 1981).

Etymology. The specific epithet is derived from the initials of the W.A. Native Orchid Study and Conservation Group. The Group has been very active in extending our knowledge of the orchids in Western Australia and has contributed many specimens to the Western Australian Herbarium.

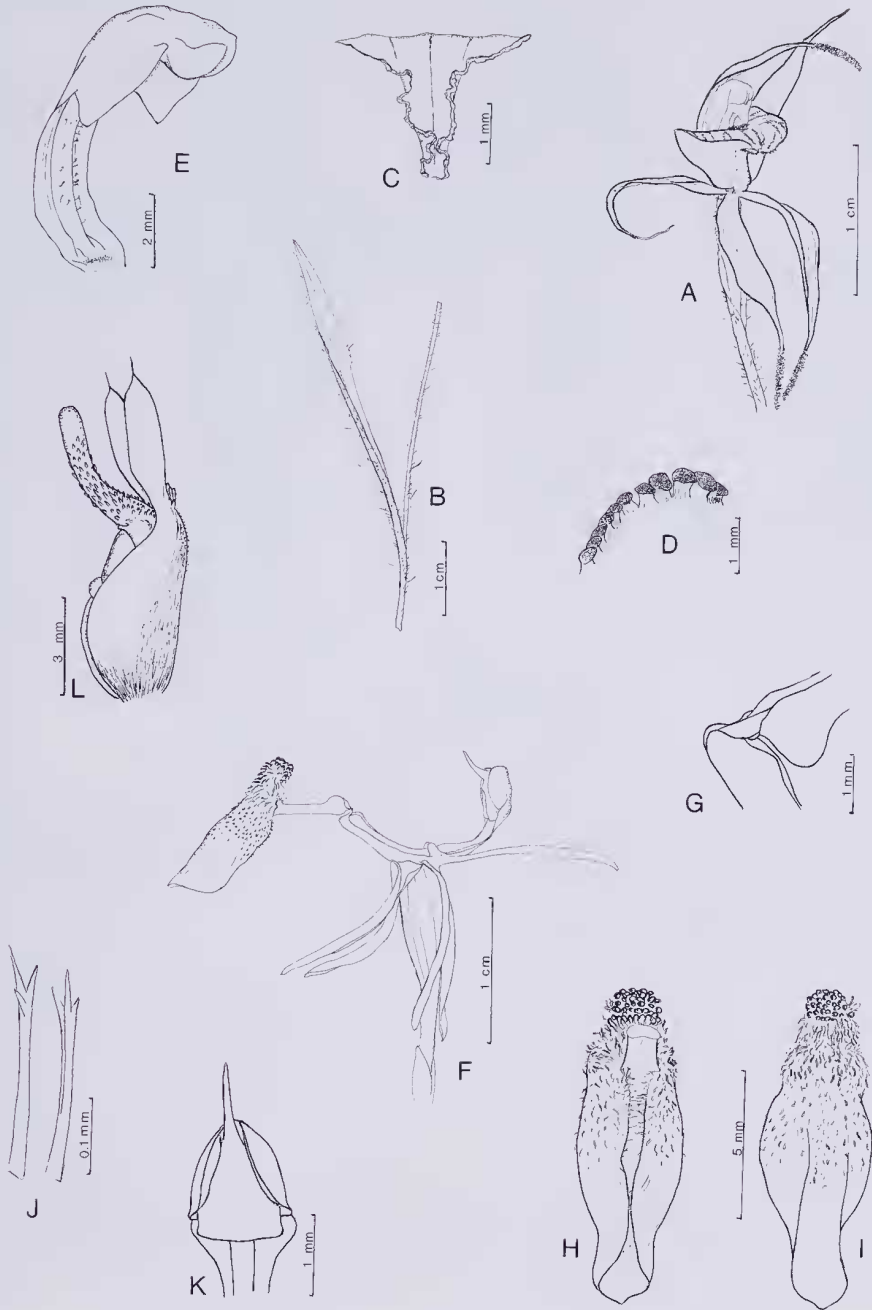


Figure 3. A-E—*Caladenia wanosa*. A—Flower. B—Leaf. C—Apex of labellum from front. D—One row of calli. E—Column. From A. S. George 9530. F-K—*Drakaea thynniphila*. F—Flower. G—Hinge of labellum. H—Lamina of labellum from front. I—Lamina of labellum from rear. J—Hairs from lamina of labellum. K—Anther and stigma. Between Nannup and Pemberton, collector unknown. L—*Thelymitra variegata* var. *apiculata*. Column from side. From A. S. George 2598.

Drakaea thynniphila A. S. George, sp. nov. (Figure 3F-K)

Species *Drakaeae elasticae* Lindley affinis, a qua lamina labelli parviore (6-10 mm longa) non verrucosa praeter basim, apice non vel parum sursum flexo, differt.

Typus: Gull Rock Road, E of Oyster Harbour, Western Australia (34°59'S, 118°00'E), 1 Oct. 1971, A. S. George 11099 (holo: PERTH; iso: CANB).

A slender plant 13-35 cm tall, glabrous except labellum and rarely leaf. *Leaf* cordate, sessile at base of stem, \pm amplexicaul, obtuse, 6-13 mm long, the centre thick and spongy below becoming thinner when dried, grey-green above with reticulate venation, rarely pubescent above. *Stem bract* 1, sessile, closely appressed, 4-6 mm long. *Floral bract* similar. *Pedicel* slender, 1-2 cm long. *Perianth segments* (except dorsal sepal) reflexed against ovary or curved forwards, narrow-linear, acute, 8-12 mm long, the margins inrolled; dorsal sepal extended horizontally behind column, similar to other segments, 9-13 mm long. *Labellum* on a claw with a median hinge, the lower part 5-6 mm long with a small swelling around a depression on upper side towards hinge; upper part of claw 5-6 mm long with a small swelling just above hinge; lamina dark red-black, smooth except base, 6-10 mm long, \pm oblong, slightly swollen below point of attachment, then narrowed, the apex not or slightly flared, straight or a little upturned; callus below point of attachment consisting of variable rounded sessile glands, usually with a neck; both callus and adjacent half of lamina hirsute with simple or slightly divided hairs. *Column* reclined backwards, 7-9 mm long; basal auricles oblong-triangular, rounded, 2 mm long; stigma with apical mucro projecting beyond anther.

Collections examined. ?Yarloop, 4 Oct. 1977, A. Brown; Napier, near Albany, 14 Sept. 1971, L. Byrne; Gull Rock Road, E of Albany, 14 Sept. 1971, L. Byrne; Gull Rock Road, E of Albany, 1 Oct. 1971, A. S. George 11097; Rowley Road, SW of Forrestdale, 2 Oct. 1977, A. S. George s.n.; Donnelly River, 4 miles S of Nannup-Pemberton Road, 25 Oct. 1959, M. C. George; East Porongurups, Sept. 1930. B. T. Goadby; Denmark, 23 Sept. 1973, G. Rogerson; 1.5 miles W of Walpole, 21 Sept. 1974, T. G. Wilson; between Albany & Denmark, late Sept. 1975, C. Woolcock. All collections at PERTH.

Distribution. Western Australia, in near-coastal districts between Perth and Albany.

Habitat. In white sand on flats adjacent to swamps, in low open-woodland of *Eucalyptus marginata*, *Banksia* spp. and *Casuarina fraseriana*.

Flowering period. September-October.

Affinities. *Drakaea thynniphila* differs from *D. elastica* Lindley, its closest relative, in having the lamina of the labellum somewhat smaller, without an upturned apex, smooth and evenly dark red-black without spots. The two species have similar geographical ranges and flowering times, but the new species is usually much less frequent in number of plants.

Etymology. The specific epithet is derived from Thynninae, the subfamily to which belong the wasps which pollinate *Drakaea* (Stoutamire 1981), and the Greek suffix *phila* (loving).

Conservation status. Rare, coded 3R (Leigh, Briggs & Hartley 1981).

Pterostylis dilatata A. S. George, sp. nov.

Species *Pterostylis nanae* R. Br. affinis, a qua foliis plantae florentis omnibus caulinis nullis rosulatis vel basalibus, etiam apicibus petalorum dilatatis, differt.

Typus: Below N side of Bluff Knoll, Stirling Range, Western Australia (34°22'S, 118°15'E), 6 July 1969, A. S. George 9390 (holo: PERTH; iso: CANB).

Flowering plant slender, 5-15 cm tall, without basal leaves. *Stem* leafy, finely scabrid; basal bract sheathing, 3-6 mm long. *Leaves* 3-6, narrowly lanceolate, acute, 6-23 mm long, 1.5-5.5 mm wide. *Flower* 1, erect, translucent white banded with bright to pale green. *Galea* 15-24 mm tall, the hood curved forward and slightly downward. *Dorsal sepal* gibbous near base, broadly linear above, rather abruptly narrowed to obtuse apex. *Petals* slightly exceeding dorsal sepal, the apices obtuse, dilated and concave forming a prominent hood 9-10 mm wide; outer margins slightly irregular. *Lateral sepals* erect, 22-30 mm long, united and narrowly cuneate for 10-14 mm, the apices filiform, terete, slightly clavate in distal 2-3 mm; sinus horizontal, the margin inrolled with a prominent central, obtuse, emarginate lobe. *Labellum* lamina oblong, obtuse, 5-6.5 mm long, with basal hair tuft. *Column* 7-8 mm high.

Selected collections examined. 19 miles (c. 30 km) N of Regans Ford, 19 July 1978, R. Cranfield 225 (PERTH); 8 km N of Kukerin, 1 July 1970, A. S. George 9898 (PERTH); Boyatup Hill, 33°44'S, 123°02'E, 13 Aug. 1980, A. S. George 15980 (PERTH); Manmanning, 10 Aug. 1974, B. & M. Smith (PERTH); 1 km N of Gibson, 5 Aug. 1980, D. R. Voigt s.n. (PERTH).

Distribution. Western Australia, at scattered localities in the south west between Perth and Israelite Bay, with an isolated occurrence at Point Culver on the edge of the Great Australian Bight.

Habitat. In sand in Eucalypt low woodland and open shrubland, usually in shelter of shrubs; also in granitic soil in closed scrub; at Gngangara persists in plantation of *Pinus radiata*.

Flowering period. June-August.

Affinity. *Pterostylis dilatata* is clearly related very closely to *P. nana* R. Br. and I have deliberated for some years as to the rank it should be given. It may easily be distinguished from *P. nana* by the lack of any basal leaves in flowering plants, and by the broad apices of the petals which give the galea a more hooded aspect. In *Pterostylis*, the presence or absence of a basal rosette in flowering plants has been considered important in the infrageneric classification and usually is linked to significant floral characters. *Pterostylis nana* and *P. dilatata* are exceptions, for their flowers are very similar morphologically.

The plant described by Lindley as *Pterostylis pyramidalis* is a variant of *P. nana* in which the basal leaves form a loose, not compact, rosette.

Conservation status. Rare, coded 3RC (Leigh, Briggs & Hartley 1981).

Etymology. The Latin *dilatatus*, widened, refers to the apices of the petals.

Thelymitra variegata (Lindley) F. Muell. var. ***apiculata*** A. S. George, var. nov. (Figure 3L)

A *Thelymitra variegata* (Lindley) F. Muell. typica lobis lateralibus columnae apiculatis differt; apiculi filiformi, 0.5-1 mm longi. Folium non spirale. Segmenta perianthii 10-17 mm longa, purpurea maculis atro-purpureis, marginibus aureis.

Typus: 7 miles (11 km) SE of Badgingarra homestead, Western Australia (30°29'S, 115°36'E), 19 June 1961, A. S. George 2598 (holo: PERTH).

Differs from typical *Thelymitra variegata* (Lindley) F. Muell. in the apiculate lateral lobes of the *column*: apiculi filiform, 0.5-1 mm long. *Leaf* not spiral. *Perianth segments* 10-17 mm long, bright purple with deep purple spots, the margins golden.

Collections examined. 3 miles (5 km) SW of Mt Lesueur, 24 July 1969, K. M. Allan 65; Stockyard Gully, July 1963, W. H. Butler; 2 miles (3 km) E along McNamarra Road from Brand Hwy, near Badgingarra, 19 July 1978, R. Cranfield 246; c. 5 miles (8 km) NE of Hill River Spring on Watheroo road, 19 June 1961, A. S. George 2608; Mogumber Mission, June 1965, M. C. George; near Jurien turnoff from Brand Hwy, 1981, P. Nikulinsky; Watheroo, 2 Aug. 1971, Mrs Scott (fls almost over). All collections at PERTH.

Distribution. Western Australia, between Eneabba and Mogumber.

Habitat. In lateritic sand in low shrubland.

Flowering period. June-July.

Discussion. *Thelymitra variegata* is variable in size and in the representation of gold and pale and deep purple in the perianth, but in general the floral morphology remains uniform. An exception is found in northern populations where the lateral lobes of the column each bear a fine apiculum. In addition the plants usually flower very early, in June and July; the typical variety flowers in August and September, although it may appear in July on the heaths east of the Stirling Range. The geographical range of var. *apiculata* is mostly to the north of that of var. *variegata*, but there are collections of the latter from Watheroo and Mt Lesueur.

Conservation status. Endangered, coded 2E (Leigh, Briggs & Hartley 1981).

Etymology. The varietal epithet refers to the fine points on the column lobes.

Acknowledgements

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